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Page XVI: Recommendation: Add a clarifying phrase, “; Effects at <5µg/dL also occur at <10µg/dL.”, to the Notes on Table 1.1: NTP conclusions on health effects of low level Pb by life stage. See the attached edit of the table, in which the clarification appears.

Justification: Adding this phrase to the Notes will eliminate the ambiguity that results from not duplicating the lists of effects at <5µg/dL for children and for adults in the corresponding lists of effects at <10µg/dL. While brevity is the advantage of avoiding such duplicate wording in the table, it creates uncertainty, which the added phrase will remove.

See below for recommended clarifying addition to Notes ("; Effects at <5µg/dL also occur at <10µg/dL.").

Table 1.1: NTP conclusions on health effects of low level Pb by life stage				
Life Stage	Blood Pb Level	NTP Conclusion	Principal Health Effects	Bone Pb Evidence
Children	<5µg/dL	<i>Sufficient</i>	Decreased academic achievement and specific cognitive measures, increased incidence of ADHD and problem behaviors	Tibia and dentin Pb are associated with ADHD, behavior, and cognition.
		<i>Limited</i>	Delayed puberty and decreased IQ, decreased kidney function in children age 12 years or older	The one available study of bone Pb in children does not support an association with postnatal growth.
	<10µg/dL	<i>Sufficient</i>	Delayed puberty, reduced postnatal growth, decreased IQ, decreased hearing, increased IgE*(not health outcome)	No data
		<i>Limited</i>	Increased hypersensitivity/allergy by skin prick test to allergens	No data
		<i>Inadequate</i>	Asthma, eczema, non-allergy immune function, cardiovascular effects, renal function children under age 12	No data
Adults	<5µg/dL	<i>Sufficient</i>	Decreased glomerular filtration rate	The one available study of bone Pb in the general population supports an association between bone Pb and decreased kidney function.
	<10µg/dL	<i>Sufficient</i>	Increased blood pressure, increased risk of hypertension, increased cardiovascular-related mortality; maternal blood Pb associated with reduced fetal growth	The association between bone Pb and cardiovascular effects is stronger than for blood. Maternal bone Pb is associated with reduced fetal growth.
		<i>Limited</i>	Psychological effects, decreased cognitive function, decreased hearing, increased incidence of ALS and essential tremor; maternal blood Pb associated with increased incidence of spontaneous abortion and preterm birth	The association between bone Pb and cognitive decline is stronger than for blood.
		<i>Inadequate</i>	Immune function, stillbirth, endocrine effects, birth defects, fertility or time to pregnancy**, and sperm parameters**	No data

Notes: ADHD - attention deficit hyperactivity disorder; IgE – immunoglobulin E; ALS - amyotrophic lateral sclerosis; Effects at <5µg/dL also occur at <10µg/dL.

*Increased serum IgE is associated with hypersensitivity; however, as described in [Section 1.4.3](#), increased IgE does not equate to disease.

**The NTP concludes that there is inadequate evidence that blood Pb levels <10µg/dL are associated with fertility, time to pregnancy, and sperm parameters; however, given the basis of the original nomination, the NTP evaluated the evidence that higher blood Pb levels (i.e., above 10µg/dL) are associated with reproductive and developmental effects and those conclusions are discussed in [Section 1.4.6](#) and presented in [Table 1.2](#).